

Applicants : Scott D. Brandenburg et al.  
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**In the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A printed circuit board (PCB) assembly, comprising:

a printed circuit board (PCB) for connecting a plurality of electrical components, the PCB including a plurality of conductive layers each separated by a non-conductive layer; and

a first integrated conductive bus structure extending from a first edge of the PCB, wherein a first portion of the bus structure that extends from the edge of the PCB forms a plurality of electrically separate contacts of a connector and a second portion of the bus structure that is laminated into the PCB as an internal layer of the PCB couples each of the contacts to at least one conductive trace ~~of within~~ the PCB through plated holes.

2. (Currently Amended) The assembly of claim 1, further including:

an aperture formed in the PCB adjacent the second portion of the bus structure, the aperture providing access to the second portion of the bus structure; and

a filter block incorporated positioned within the PCB approximate the integrated aperture formed in the PCB, the filter block located adjacent the second portion of the bus structure, the filter block providing inductive filtering for the contacts of the connector.

3. (Original) The assembly of claim 2, wherein the filter block is a ferrite material.

4. (Currently Amended) The assembly of claim 3, further including:

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a plurality of capacitors positioned on at least one surface of the PCB assembly adjacent to the edge of the PCB from which the connector extends and adjacent the filter block, wherein at least one of the capacitors is coupled between ground and each one of the contacts of the connector.

5. (Original) The assembly of claim 1, wherein the assembly is overmolded with a plastic material, and wherein a portion of the plastic material forms a connector housing that surrounds the contacts of the connector.

6. (Previously Presented) The assembly of claim 5, wherein the connector housing formed by the overmolded plastic material is shaped to receive a body of a mating connector.

7. (Original) The assembly of claim 1, wherein the integrated conductive bus structure is made of copper.

8. (Currently Amended) The assembly of claim 1, further comprising:

a second integrated conductive bus structure extending from a second edge of the PCB, wherein a first portion of the second integrated conductive bus structure that extends from the second edge of the PCB forms a plurality of second electrically separate contacts of a second connector and a second portion of the second integrated conductive bus structure that is laminated into the PCB as an internal layer of the PCB couples each of the second electrically conductive contacts to at least one conductive trace ~~of within~~ the PCB through different plated holes, and wherein the second edge is opposite the first edge.

9. (Currently Amended) A printed circuit board (PCB) assembly, comprising:

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a printed circuit board (PCB) for connecting a plurality of electrical components, the PCB including a plurality of conductive layers each separated by a non-conductive layer; and

a first integrated conductive bus structure extending from a first edge of the PCB, wherein a first portion of the bus structure that extends from the edge of the PCB forms a plurality of electrically separate contacts of a connector and a second portion of the bus structure that is laminated into the PCB as an internal layer of the PCB couples each of the contacts to at least one conductive trace ~~of within~~ the PCB through plated holes, and wherein the assembly is overmolded with a plastic material and a portion of the plastic material forms a connector housing that surrounds the contacts of the connector.

10. (Currently Amended) The assembly of claim 9, further including:

an aperture formed in the PCB adjacent the second portion of the bus structure, the aperture providing access to the second portion of the bus structure; and

a filter block incorporated positioned within the PCB approximate the integrated aperture formed in the PCB, the filter block located adjacent the second portion of the bus structure, the filter block providing inductive filtering for the contacts of the connector.

11. (Original) The assembly of claim 10, wherein the filter block is a ferrite material.

12. (Currently Amended) The assembly of claim 11, further including:

a plurality of capacitors positioned on at least one side of the assembly and adjacent the filter block, wherein at least one of the capacitors is coupled between ground and each one of the contacts of the connector.

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13. (Previously Presented) The assembly of claim 9, wherein the connector housing formed by the overmolded plastic material is shaped to receive a body of a mating connector.

14. (Original) The assembly of claim 9, wherein the integrated conductive bus structure is made of copper.

15. (Currently Amended) The assembly of claim 9, further comprising:

a second integrated conductive bus structure extending from a second edge of the PCB, wherein a first portion of the second integrated conductive bus structure that extends from the second edge of the PCB forms a plurality of second electrically separate contacts of a second connector and a second portion of the second integrated conductive bus structure that is laminated into the PCB as an internal layer of the PCB couples each of the second electrically conductive contacts to at least one conductive trace ~~of~~ within the PCB through different plated holes, and wherein the second edge is opposite the first edge.

16. (Currently Amended) A printed circuit board (PCB) assembly for an automotive assembly, comprising:

a printed circuit board (PCB) for connecting a plurality of electrical components, the PCB including a plurality of conductive layers each separated by a non-conductive layer;

an integrated conductive bus structure extending from a first edge of the PCB, wherein a first portion of the bus structure that extends from the edge of the PCB forms a plurality of electrically separate contacts of a connector and a second portion of the bus structure that is integrated within the PCB couples each of the contacts to at least one conductive trace ~~of~~ within the PCB through plated holes, and wherein the assembly

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is overmolded with a plastic material and a portion of the plastic material forms a connector housing that surrounds the contacts of the connector; and

a filter block incorporated within an aperture formed in the PCB approximate the integrated bus structure, the aperture providing access to the second portion of the bus structure, the filter block providing inductive filtering for the contacts of the connector.

17. (Original) The assembly of claim 16, wherein the filter block is a ferrite material.

18. (Currently Amended) The assembly of claim 17, further including:

a plurality of capacitors positioned on at least one side of the assembly and adjacent the filter block, wherein at least one of the capacitors is coupled between ground and each one of the contacts of the connector.

19. (Original) The assembly of claim 16, wherein the connector housing is shaped to receive a body of a mating connector.

20. (Original) The assembly of claim 16, wherein the integrated conductive bus structure is made of copper.

21. (Original) The assembly of claim 16, wherein the automotive assembly is one of an engine control module, a transmission control module and a sensor and power module.